

Interactive comment on “Pre-industrial and mid-Pliocene simulations with NorESM-L – AGCM simulations” by Z. Zhang and Q. Yan

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Received and published: 1 June 2012

We sincerely thank the reviewer for the detailed and constructive comments. We also thank the reviewer for pointing out our grammar mistakes in the paper.

In this quick reply, we only answer reviewer's specific points. All grammar mistakes will be revised in the revised version.

Specific points:

Section 4.1.2 Precipitation, page 1209-1210: Although the overall pattern of the simulated precipitation is in good agreement with that of observations, perhaps the authors can also briefly point out regions where precipitation differs greatly, eg China, India and over the ocean to the west of India.

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The large discrepancies of annual precipitation between the simulation and the observation appear over the tropical oceans or lands. The simulation largely overestimates the annual precipitation over e.g. the Arabian Sea, the South China Sea, the tropical Pacific in the Northern Hemisphere and East Asia; but greatly underestimates the annual precipitation over e.g. the Indian Ocean and the tropical Pacific in the Southern Hemisphere. Please see Figure AF1.

Line 8, page 1211: A reference to figure 7 does not appear anywhere in the text and needs to be inserted here.

Figure 7 will be referenced in the Section 4.2.2 in the revised version.

Last sentence in 4.2.2 Precipitation, page 1211: It seems to me that the values given by the authors refer to boreal summer (ie figures 7b and 7e), and not to the annual mean (figures 7a and 7d). The decreases in the annual mean values over South Asia appear to be much smaller. The authors could also mention the equally large discrepancy in precipitation anomalies over the Indonesian archipelago.

Yes. The sentence will be revised to “For example over South Asia and the Indonesian archipelago, the simulated mid-Pliocene summer precipitation decreases by 4mm d⁻¹ relative to the control experiment, but decreases by 6mm d⁻¹ referenced to the preindustrial experiment.”

Line 20, page 1212: Does “In Indian” mean “Over the Indian Ocean”, “Over India” or “Over the Indian sub-continent”?

Should be “Over the Arabian Sea and the Indian sub-continent”.

Figure 4, page 1223: It would be helpful if the authors could include sub-figures for the differences between the mid-Pliocene experiments and the other two, as it is not easy to deduce the differences from (b) and (c), especially the latter.

The zonal mean of the differences between the mid-Pliocene and the other two are illustrated in the Figure 6 and Figure 7, in the middle.

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We will show all the revisions of grammar mistakes in the final response.

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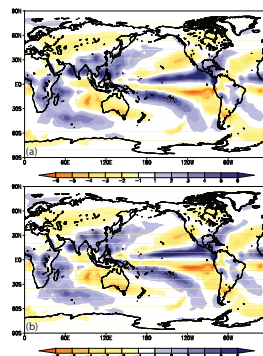


Fig. 1. Figure AF1. Differences of annual precipitation (mm/d), (a) between the pre-industrial experiment and the GPCP 1979–2008 precipitation, (b) between the control experiment and the observation.

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